Listing of Claims:

Please make the following amendments to the specification (material to be inserted in replacement paragraphs or sections is in **bold and underline**, and material to be deleted is in ~~strikeout~~ or (if the deletion is of five or fewer consecutive characters or would be difficult to see) in double brackets [[ ]]).

1. (Currently amended) A method of detecting addition or removal of a phosphate group to or from a substrate, comprising:

contacting a luminescent peptide with a binding partner that binds specifically to the peptide only if the peptide is phosphorylated, or only if the peptide is not phosphorylated, **wherein the binding partner includes an entrapped metal, and** wherein the peptide is a substrate for an enzyme that catalyzes addition or cleavage of a phosphate group to or from a protein~~, the peptide having at least one amino acid selected from the group consisting of serine and threonine, where the serine or threonine is either near a sequence that is enriched with basic amino acids, or followed in the C-terminal direction by a proline residue,~~; and

measuring luminescence polarization from the luminescent peptide, wherein the amount of measured luminescence polarization can be related to the extent of binding between the luminescent peptide and the binding partner.

2. (Currently amended) The method of claim 1 further comprising ~~the step of~~

~~———~~correlating luminescence polarization with kinase activity.

3. (Currently amended) The method of claim 1 further comprising ~~the step of~~

———correlating luminescence polarization with phosphatase activity.

4. (Original) The method of claim 1, wherein the peptide has fewer than about 15 amino acids.

5. (Original) The method of claim 1, wherein the protein and the peptide are the same.

6. (Original) The method of claim 1, wherein the protein and the peptide are different.

7. (Currently amended) The method of claim 1 further comprising ~~the step of~~

———providing at least one phosphate group on the luminescent peptide, and competing with the luminescent peptide by catalyzing formation of unlabelled phosphorylated protein.

8. (Original) The method of claim 1, wherein the binding partner binds specifically to a phosphorylated protein substantially without regard to the particular amino acid sequence of the protein.

9. (Currently amended) The method of claim 1[[8]], wherein the binding partner comprises a macromolecule **that includes** ~~having~~ entrapped metal ions.

10. (Currently amended) The method of claim 9, wherein the metal ions comprise gallium ~~or iron~~.

11. (Canceled)

12. (Original) The method of claim 1, wherein the peptide is amidated on one end.

13-16. (Canceled)

17. (Currently amended) The method of claim 1 further comprising illuminating the sample with polarized light ~~from a high color temperature continuous light source~~.

18-46. (Canceled)

47. (New) The method of claim 1 further comprising:

exposing the luminescent peptide to the enzyme, in a reaction mixture, to catalyze phosphorylation or dephosphorylation of the peptide; and

adding a stop solution to the reaction mixture, following the step of exposing, to stop the reaction catalyzed by the enzyme;

wherein the step of measuring luminescence polarization is performed, at least in part, after the steps of exposing and adding.

48. (New) The method of claim 47, wherein the stop solution includes a chelator.

49. (New) The method of claim 1, wherein the steps of contacting and measuring are performed in a microplate well.

50. (New) A method of detecting addition or removal of a phosphate group to or from a substrate, comprising:

contacting a luminescent peptide with a binding partner that binds specifically to the peptide only if the peptide is phosphorylated, or only if the peptide is not

phosphorylated, wherein the binding partner includes gallium involved in binding between binding partner and the peptide, and wherein the peptide is a substrate for an enzyme that catalyzes addition or cleavage of a phosphate group to or from a protein; and

measuring luminescence polarization from the luminescent peptide, wherein the amount of measured luminescence polarization can be related to the extent of binding between the luminescent peptide and the binding partner.